

application is anticipated under the provisions of 35 USC § 102 or obvious under the provisions of 35 USC § 103. Thus, the Applicants believe that all of these claims are now in allowable form.

Claims 1-11, 15-16, 18-30 remain in this application. Claims 12-14 and 17 have been canceled. Claims 1, 4, 5, 6, 10, 16, 18-20 and 28 have been amended.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, the Examiner should telephone Ms. Janet M. Skafar, Esq. at (650) 988-0655 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

#### The Rejections Under 35 USC § 112

The Examiner has rejected claims 28-30 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. In response, Applicants have amended claim independent 28 to change "a transmissive reflector located between said first location and the second surface of the display panel" to "a transmissive reflector located behind said non-viewing surface of the display panel." Therefore, Applicants respectfully submit that the rejection of independent claim 28, and claims 29 and 30 which are dependent therefrom, under 35 USC § 112, second paragraph, is now moot and should be withdrawn.

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Rejections under 35 USC § 102

The Examiner has rejected each of independent claims 1 and 16, and dependent claims 2-3, and 10 under 35 USC § 102(b) as being anticipated by the Selker patent (United States Patent 5,777,704 issued July 7, 1998 to Edwin Joseph Selker. In response, Applicants have amended independent claims 1 and 16 to include the diffuser of dependent claims 4 and 17, respectively. Therefore, claims 1 and 16, and dependent claims 2, 3 and 10 are not anticipated by the Selker patent.

Rejections under 35 USC § 103

A. Independent claims 1 and 20<sup>16</sup>

The Examiner has rejected dependent claims 4-15 and 17-20 as being obvious under the provisions of 35 USC § 103(a) as being unpatentable over the Selker patent, taken in view of the teachings in the Gloor et al patent (United States Patent 4,298,249 issued Nov. 3, 1981 to Ernst Gloor et al). Independent claims 1 and 16 have been amended to include the limitations of dependent claims 4 and 17, respectively. Therefore, this rejection will be discussed with respect to independent claims 1 and 16. Furthermore, this rejection is respectfully traversed with respect to independent claims 1 and 16, and dependent claims 2-15 and 17-20, respectively.

In essence, the Examiner states that the Selker patent fails to disclose a diffuser located behind the transmissive display panel. Then, the Examiner, given the teachings in this patent of a housing, a transmissive

display panel, and a reflector, asserts that it would be obvious to one skilled in the art to modify these teachings to include a diffuser that can be located behind the transmissive display panel as shown in Fig. 3 of the Gloor et al patent. The Examiner then asserts that it would have been obvious to one of ordinary skill in the art to modify the display device of the Selker patent to have a diffuser located behind the display panel in order to improve utilization efficiency of light to a display surface as well as to improve the viewing angle of the display device. Even assuming that this assertion may appear facially plausible, the combination of the specific teachings in the Selker patent and the Gloor et al patent do not result in the invention as claimed in independent claim 1.

Generally speaking, the Selker and the Gloor et al patents are directed to the same problem as are the present Applicants; namely, enhancing the observability of a liquid crystal display. However, as the Examiner will soon see the teachings in the Selker and Gloor et al patents, and those of the present Applicants sharply diverge.

The Selker patent, in the Abstract, provides an "arrangement for enhancing the observability of a multicolored liquid crystal display in a computer of the notebook type using an arrangement in which the top lid of the laptop is mechanically separated into a diffuser/reflective surface and the LCD in its frame. the diffusing/reflecting lid is attached through a slider and linkage arrangement permitting the diffuser/reflector to act as a flat field illuminator and to move in a plane, apart from, yet forming a dihedral angle with the plane of the

LCD. The lid so positioned can opportunistically reflect ambient light through the plane of the LCD. Also, by causing the lid to project over the plane of the LCD, it secures a contrast-maintaining shadow otherwise bleached by light incident to the LCD viewing surface."

In particular, in the Selker patent, "the top lid of a laptop computer is mechanically bifurcated into a lightpipe diffuser/reflective outer portion and a transmission multicolored LCD inner portion, and in which the outer portion is attached through appropriate folding links and hinges to the LCD. As a consequence, the outer portion can be positioned in any one of a range of planes opposing the LCD. The outer portion forms a dihedral angle only with the LCD and not necessarily with any other plane or surface associated with the laptop." (The Selker patent, col. 3, lines 12 et seq.). The "outer portion, when in close contact with the LCD, provides diffused artificial backlighting. However, when the outer portion is spatially positioned relative to the LCD by the laptop user, opportunistically it causes ambient light sources to be reflectively captured and transmitted through the display. This enhances the display while allowing the diffused light source to be reduced in intensity and allowing a reduction in laptop battery drain." (The Selker patent, col. 3, lines 23 et seq.).

Significantly, the Selker patent does not teach, as recited in independent claim 1, "a diffuser located behind the transmissive display panel, the diffuser being moveably attached to the housing, the diffuser being separate from the transmissive display panel, the diffuser

for diffusing at least some of the ambient light entering from behind the non-viewing surface before that ambient light passes through the non-viewing surface of the display panel."

The Examiner states that the Selker patent fails to mention a diffuser located behind the transmissive display panel. The Examiner then uses the Gloor et al patent for teaching a diffuser that can be located behind the transmissive display panel. The Examiner then asserts that "it would have been obvious to one of ordinary skill in the art to modify the Selker's display device having a diffuser located behind the display panel in order to improve an utilization efficiency light to a display surface as well as to improve viewing angle of a display device."

Even so, the Gloor et al patent provides no teachings whatsoever that the diffuser is moveably attached to the housing, and that the diffuser diffuses at least some of the ambient light from behind the non-viewing surface of the display panel.

The Gloor et al patent, in Fig. 3, teaches that "[b]ehind the reflector 6 and the rear plate 3 is provided a further plate 18 made of transparent material and having a diffusely scattering surface 19. (The Gloor et al patent, col. 3, lines 61 et seq.). "The display 1 consists of two mutually parallel transparent plates, a front plate 2, which faces the observer 8, and a rear plate 3, which faces away from the observer 8. These plates 2, 3 can be made of glass or any other suitable, transparent material. In the narrow interspace between these two plates, 2, 3 there is disposed

an optically changeable medium, the display medium 7, in the case of a liquid display device, the display medium used is a liquid crystal substance which is retained air-tightly between the plates 2,3 by a connecting edge strip." (The Gloor et al patent, col. 2, lines 58 et seq.). In other words, the Gloor et al patent teaches a reflector, diffuser and liquid crystal display that are sandwiched together and invariantly positioned with respect to each other. Significantly, the Gloor et al patent does not teach a diffuser that is moveable and a reflector that is movable.

Hence, assuming arguendo that one skilled in the art were to combine the teachings of the Selker patent and the Gloor et al patent, the resulting system would have a diffuser that is invariantly positioned adjacent the liquid crystal display, and not the movable diffuser of the present invention. Furthermore, the resulting system would not have a diffuser that diffuses at least some of the ambient light entering a housing from behind the display panel.

Thus, the present invention is not shown, disclosed or suggested, whether explicitly or even implicitly, by the cited art, whether taken singly or in any combination, including that put forth by the Examiner.

Independent claim 1, as amended, contains suitable limitations directed at the distinguishing aspects of the present invention. This claim, with these limitations shown in a bolded typeface, recites as follows:

"A device, comprising:  
a housing;

a transmissive display panel mounted in a first location in said housing, the display panel comprising first and second surfaces, the second surface being a non-viewing surface;  
a device for directing ambient light entering said housing through a second location of said housing, said ambient light entering from behind the non-viewing surface and being directed through said non-viewing surface, the second location being different from the first location, the **device for directing ambient light being moveably attached to said housing** at a third location; and  
**a diffuser located behind the transmissive display panel, the diffuser being moveably attached to said housing at a fourth location different from said third location, the diffuser for diffusing at least some of said ambient light from behind said non-viewing surface before it passes through said non-viewing surface of the display panel.**" [emphasis added]

Independent claim 16 contains very similar distinguishing limitations to those recited in claim 1.

As such, the Applicants submit that independent claims 1, 16 and 28 are not rendered obvious by the teachings in the cited art. Hence, each of these independent claims is patentable under the provisions of 35 USC § 103.

Moreover, each of claims 2-15, 17-20 and 29-30 depends, either directly or indirectly, from independent claims 1, 16 and 28, respectively, and recites further distinguishing aspects of the present invention. As such, each of these dependent claims is also not rendered obvious

over the teachings in the cited art for the same exact reasons set forth above. Hence, each of these dependent claims is also patentable under the provisions of 35 USC § 103.

B. Independent claim 28

The Examiner has rejected independent claim 28, and claims 29-30 dependent therefrom, as being obvious under the provisions of 35 USC § 103(a) as being unpatentable over the Selker patent, taken in view of Applicants' admitted prior art (Fig. 3). This rejection is respectfully traversed with respect to independent claim 28, and dependent claims 29-30, respectively.

In essence, the Examiner states that the Selker patent fails to disclose a transmissive reflector. The Examiner then states that the use of the transmissive reflector in a display device is clearly known to one skilled in the art, as disclosed in Fig. 3 of Applicants' admitted prior art. The Examiner then asserts that it would have been obvious to one skilled in the art at the time the invention was made to use a transmissive reflector in a display device to obtain a display device which can be used in two modes, (e.g., a transreflector display device).

Significantly, neither Applicant's admitted prior art nor the Selker patent teach, as recited in independent claim 28, "a diffuser for diffusing ambient light originating from outside the housing to provide diffused-ambient light inside the housing; and two or more devices for directing at least some of the diffused-ambient



light, through the transmissive reflector and the non-viewing surface of the display panel, the two or more devices forming sidewalls."

In the Selker, patent, as shown in Fig. 2, the reflector surface 203 is in the cover 201. Unlike the present invention, the Selker patent does not teach sidewalls that have a reflective surface. Similarly, Applicants' admitted prior art, in Fig. 3, does not teach sidewalls that have a reflective surface. Nor does Applicants' admitted prior art of Fig. 3 teach a diffuser.

Hence, assuming arguendo that one skilled in the art were to combine the teachings of the Selker patent and Applicants' admitted prior art, the resulting system would have a reflector in the cover of the housing, and not the two reflectors that form sidewalls to direct at least some of the diffused-ambient light through the transmissive reflector and the non-viewing surface of the display panel as in the present invention.

Thus, the present invention is not shown, disclosed or suggested, whether explicitly or even implicitly, by the cited art, whether taken singly or in any combination, including that put forth by the Examiner.

Independent claim 28, as amended, contains suitable limitations directed at the distinguishing aspects of the present invention. This claim, with these limitations shown in a bolded typeface, recites as follows:

"A transreflective display device,  
comprising:

a housing;  
a display panel mounted in a first location in said housing, the display panel including first and second surfaces, the second surface being a non-viewing surface;  
a transmissive reflector located behind said non-viewing surface of the display panel;  
**a diffuser for diffusing ambient light originating from outside the housing to provide diffused-ambient light inside the housing; and**  
**two or more devices for directing at least some of the diffused-ambient light through the transmissive reflector and the non-viewing surface of the display panel, the two or more devices forming sidewalls."** [emphasis added]

As such, the Applicants submit that independent claim 28 is not rendered obvious by the teachings in the cited art. Hence, each of these independent claims is patentable under the provisions of 35 USC § 103.

Moreover, each of claims 29-30 depends, either directly or indirectly, from independent claim 28, respectively, and recites further distinguishing aspects of the present invention. As such, each of these dependent claims is also not rendered obvious over the teachings in the cited art for the same exact reasons set forth above. Hence, each of these dependent claims is also patentable under the provisions of 35 USC § 103.

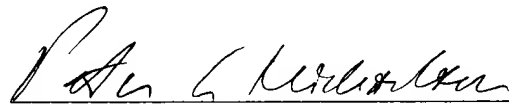
Conclusion

Thus, the Applicants submit that none of the claims, presently in the application, is obvious under the provisions of 35 USC § 103.

Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

Respectfully submitted,

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Peter L. Michaelson, Attorney  
Reg. No. 30,090  
Customer No: 007265  
(732) 530-6671

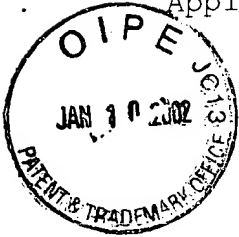
MICHAELSON & WALLACE  
Counselors at Law  
Parkway 109 Office Center  
328 Newman Springs Road  
P.O. Box 8489  
Red Bank, New Jersey 07701

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS-

Claims 12-14 and 17 have been canceled.

Claims 1, 4, 5, 6, 10, 16, 18-20 and 28 have been amended as follows:

1. (Amended) A device, comprising:

a housing;

a transmissive display panel mounted in a first location in said housing, the display panel ~~including~~ comprising first and second surfaces, the second surface being a non-viewing surface; and

a device for directing ambient light entering said housing through a second location of said housing, said ambient light entering from behind the non-viewing surface and being directed through said non-viewing surface, which is the second location being different from the first location, through the second surface of the display panel the device for directing ambient light being moveably attached to said housing at a third location; and

a diffuser located behind the transmissive display panel, the diffuser being moveably attached to said housing at a fourth location different from said third location, the diffuser for diffusing at least some of said ambient light from behind said non-viewing surface before it passes through said non-viewing surface of the display panel.

4. (Amended) The device of claim 1, wherein the third location of said housing is a bottom portion of the housing, and the fourth location of said housing is a top portion of said housing, further comprising:

~~a diffuser located behind said transmissive display panel for diffusing at least some of said ambient light before it passes through the rear portion of the display panel~~

one or more first hinges for attaching the diffuser to the top portion of said housing; and

one or more second hinges for attaching the device for directing ambient light to the bottom portion of said housing.

5. (Amended) The device of claim ~~4~~ 1, further comprising:

a hinge for attaching the device for directing ambient light to said housing.

6. (Amended) The device of claim ~~4~~ 5, further comprising:

an additional hinge for securing the diffuser to said housing.

10. (Amended) The device of claim ~~4~~ 1, further comprising:

a backlight used to generate light directed at ~~the rear portion~~ the non-viewing surface of the display panel.

15. (Amended) The device of claim 11, wherein the device for directing ambient light includes a light tunnel located between said second location and ~~said rear portion~~ non-viewing surface of the display panel.



16. (Amended) A display device, comprising:

a transmissive display panel ~~including~~ comprising a viewing surface and a non-viewing surface; ~~and~~

means for directing ambient light originating from behind the viewing and non-viewing surfaces of the display panel, to said non-viewing surface, said means for directing ambient light being positionable with respect to said transmissive display panel;

a diffuser located behind said transmissive display panel, said diffuser being positionable with respect to said transmissive display panel and said means for directing ambient light, said diffuser for diffusing at least a portion of said ambient light originating from behind said non-viewing surface before it passes through said non-viewing surface of said display panel.

18. (Amended) The display device of claim ~~17~~ 16, further comprising:

hinge means for connecting the means for directing ambient light to the ~~second~~ non-viewing surface of the transmissive display panel.

19. (Amended) The display device of claim ~~17~~ 16, further comprising:

display panel positioning means for adjusting the angle of the display panel relative to a horizontal position to thereby allow for adjustments in the amount of ambient light incident on at least one of the ~~first and second~~ viewing and non-viewing display panel surfaces.

28. (Amended) A transreflective display device,  
comprising:

a housing;

a display panel mounted in a first location in said housing, the display panel including first and second surfaces, the second surface being a non-viewing surface;

a transmissive reflector located behind said non-viewing ~~between said first location and the second~~ surface of the display panel;

a diffuser for diffusing ambient light originating from outside the housing to provide diffused-ambient light inside the housing; and

~~a device~~ two or more devices for directing at least some of the diffused-ambient light entering said housing through a second location, which is different from the first location, through the transmissive reflector and the second non-viewing surface of the display panel, the two or more devices forming sidewalls.